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MMB Ex. 1

MM Docket No. 92-122
Mass Media Bureau Exhibit 1

TESTIMONY OF RONALD D. RAMAGE

FEDERAL COMMUNICATIONS COMMISSION

Docket No. 92-122 Exhibit No. MMB 1

Presented by Mass Media Bureau

Identified 11/12/92

Disposition: Received 11/12/92

Rejected

Reporter Barbara Lird

Date 11/12/92

TESTIMONY OF RONALD D. RAMAGE

1. I, Ronald D. Ramage, am an engineer in the Kansas City Field Office of the Federal Communications Commission. Poplar Bluff, Missouri is within the office's jurisdiction.

2. At the request of the Mass Media Bureau, Mike Gusick, another FCC engineer, and I, were assigned to investigate complaints of blanketing interference attributed to radio station KOKS, Poplar Bluff, Missouri. Our investigation was conducted on February 10, 11, 12, 13 and 14, 1992. I prepared a report concerning the investigation, dated February 21, 1992. The report is attached hereto as Attachment 1.

Declarations

3. I declare under penalty of perjury that the foregoing is true and correct.

4. I further declare under penalty of perjury, that the facts set forth in Attachment 1 hereto, entitled "Special Report on FM Blanketing Interference from Radio Station KOKS, Poplar Bluff, Missouri," dated February 21, 1992, are true and correct.

Executed this 1st day of October, 1992.

Ronald D. Ramage

Ronald D. Ramage

ATTACHMENT 1

SPECIAL REPORT

ON

FM BLANKETING INTERFERENCE

FROM

RADIO STATION KOKS

POPLAR BLUFF, MISSOURI

FEBRUARY 21, 1992

WRITTEN BY

RONALD D. RAMAGE
FCC - KANSAS CITY

SPECIAL REPORT ON FM BLANKETING INTERFERENCE
ATTRIBUTED TO RADIO STATION KOKS - POPLAR BLUFF, MISSOURI
FEBRUARY 21, 1992

At the request of the Mass Media Bureau, FCC Engineers Mike Gusick and myself were assigned to investigate complaints of blanketing interference attributed to radio station KOKS. This investigation was conducted on February 10th, 11th, 12th, 13th, and 14th, of 1992.

KOKS INSPECTION:

To begin the investigation we conducted field strength measurements near the KOKS tower, measuring the signals of KOKS, WPSD-TV, KAIT-TV, and KFVS-TV. The results of these measurements are contained in attachment A. We then measured the signal strength of KOKS at this same location periodically during the week of the investigation to disprove any notion that the station lowered power during our visits to the homes of complainants. The signal strength remained consistent throughout the week when measured at this reference location.

At approximately 9:15am on 2/10/92, we arrived at the studios of radio station KOKS to begin an inspection of the station. This inspection noted several items that could affect the investigation. The station is currently licensed for a transmitter output power of 35kW. The plate voltage and plate current at the time of inspection was 11.9kV and 2.36A respectively. According to the manufacturers test data, the efficiency factor for the transmitter was 80 percent. This would indicate an output power of 22.5kW or 64 percent of authorized power. However, the stations transmitter was also capable of providing a digital percentage of power indication, which indicated that the transmitter was operating at 95.1%. After viewing the stations transmitter logs, it was obvious that there was a large discrepancy between the percent of power readings and the plate voltage and current

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readings. Neither the engineer nor the station manager was aware of these discrepancies until I pointed this out to them, even though the logs had shown these inconsistencies for over one year. The engineer then called the transmitter manufacturer, who told him that either the plate current reading or the percentage of power indication were incorrect. It was unknown as to which was out. Since it would take several days and a time consuming search to determine the problem, I instructed the engineer and the manager to not make any adjustments to the transmitter until the end of the week when the investigation had concluded. At the suggestion of KC EIC, James Dailey, I took the stations transmitter logs (which also included their tower light records) for 1/1/91, 2/4/91, and for the period 9/1/91 - 2/10/92. I provided the station with a receipt for these logs. (See attachment B for a copy of some of the logs).

The inspection determined that the station was currently operating with a 7 bay directional antenna instead of the 4 bay directional antenna the station had been authorized. In talking with Mr. Michael Wagner of MMB, and the station manager, it was determined that the station had applied for a modification of station license after the 7 bay antenna was installed in October 1991. However, the modification was not granted as of the date of inspection. I asked KOKS station management for their latest proof of performance showing the actual pattern and field strength measurements for the antenna they currently had in use. The station had not conducted the required proof.

The stations authorization specifies that the tower is to have a top beacon, and side lamps at the 1/3 and 2/3 overall height levels. Currently the tower has beacons at the top and 1/2 level with side lamps at the 1/4 and 3/4 levels.

In review of the stations public inspection file it was noted that the station did not have the required issues programs lists, requests for time from political candidates, or a list of donors supporting the stations programming. According to Mrs. Nina Stewart, she has been told by their attorney that the station is only required to keep requests from candidates

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seeking national office only. She stated that they have only had a couple requests from local or state office candidates, but they are not in the file. When asked about the donor list, Mrs. Stewart stated that their donors support all of their programs and not specific programs as specified in the rules. However, on 2/11/92 I monitored the station airing a commercial for Lane Reasons Realty which included comments that they were supporting that portion of their programming day. On 2/12/92 I visited the station and asked to see their programming logs which I had observed them keeping on 2/10/92. In review of their logs for 8:25am the previous day when I had monitored the commercial, I noticed that a Lane Reasons Insurance "PROMO" was scheduled at that time and that it was recorded. I then asked for and received a cassette recording copy of the commercial they aired.

At the conclusion of the initial inspection of the station, we advised station management of our intention to visit several of the complainants and to request the stations assistance in having them discontinue transmitting during each test conducted. They agreed to turn off the station at our request and they agreed to refrain from making any adjustments to the transmitter unless absolutely necessary.

INSPECTION SUMMARY:

#1 Tower Lighting not in accordance with the station license.
#2 Stations antenna not in accordance with station license. They are licensed for a 4 bay directional and utilizing a 7 bay directional.
#3 Station has not conducted proof of performance on 7 bay directional ant.
#4 Station did not know what power they were operating at and there are some indications that they may be at 64% of authorized.
#5 Stations public inspection file missing issues programs lists, donor lists, and requests for time from political candidates.
#6 The station was monitored airing commercials. A cassette copy of the commercial was obtained along with a copy of the stations program log for the commercial.

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VISITS TO COMPLAINANTS:

Over the period of 2/10 - 2/13/92 we then visited 14 separate residences with the purpose of determining what KOKS had or had not done to restore the complainants television and radio reception in accordance with 47CFR73.318. These visits clearly indicated that the station had made only token attempts to restore their reception. In most instances KOKS personnel had attempted to install one notch filter on only one TV receiver per home. No attempts were made to address portable television receivers and no radio receivers were included in the actions taken by KOKS. (See attachment C for individual reports on each visit made).

In talking with station manager Don Stewart, he stated that the station "could not afford" to install more than one filter per residence. He stated that he would rather help a little at all of the homes than to limit assistance to just a few. He also stated that it was his interpretation of the rules that a portable television was what is referred to as a mobile receiver in 73.318. Because of this he instructed his engineer to install one filter per household on console television sets only.

It was not possible to determine the quality of reception each complainant had enjoyed prior to KOKS commencing operations. This was due to the amount of time (3 1/2 years) that has expired since the station went on the air, the various changes that have occurred in the area of Poplar Bluff (other FM upgrades, new TV stations, etc.), and in each complainants television receiving equipment. In most cases the complainants had originally utilized twin lead antenna wire and no filters, or booster amplifiers. Now most residents have installed coaxial cable and either notch or FM trap filters. In addition, the receivers, antennas, etc. have aged another 3 1/2 years in most instances.

At the time KOKS began operations, each complainant was attempting to receive stations that are 68-86 miles distant, and up to 174 degrees apart with fixed antenna's and no amplifiers. This results in a very low signal reaching the TV receiver to begin with. Since KOKS began operations most complainants

have installed both coaxial cable and either a notch filter, or FM trap, or both. In several cases this has been at the expense of the homeowner. At .00MHz the insertion loss for 300 ohm twin lead is 1db as opposed to 3db for 75 ohm coaxial cable. This difference increases with frequency. The additional insertion loss of coax compared to twin lead, plus the loss associated with each balun, filter, amp., etc. has lowered the amount of TV signal reaching each TV receiver even more. As a result, all of the complainants have commented that they received a better picture on all channels prior to KOKS going on the air, than they do now when the station stopped transmissions for these tests. (See attachment D for calculations made to determine the distance and bearing of each TV station in reference to the KOKS tower).

Many of the complainants indicated that the filter KOKS had provided had quit working after a few weeks. In most of these instances the filter was a specially ordered notch filter manufacture by Microwave Filter Co. designed to notch out 89.5MHz. In conducting these visits it was observed that the filters were often installed directly to the antenna input connector on the receiver. One possible explanation for these failures may be the amount of heating and cooling each filter would be subjected to when attached directly to the set. This may result in a de-tuning of the filter which could easily result in the device working at first then not working after a few weeks when it sufficiently de-tuned off of the center frequency of KOKS. I contacted the manufacturer to ask them about this possibility. The engineer I talked to could not confirm or deny this theory. They did offer to test any such devices purchased within 30 days.

A second explanation that was brought up by the complainants is that the station increased power a couple weeks after installation of the filters. I cannot deny this possibility, but question it since the station had installed these filters over a long time period. It would not seem reasonable for the station to continually increase and decrease power every couple weeks just for the effect it would have on these filters. In addition, none of the complainants indicated that the interference would clear up for weeks at a time and then go bad again.

It should also be noted that station manager Don Stewart lives on the same property as the KOKS tower. At his suggestion, we viewed the reception he observes on his own television receiver. This observation indicated that he receives the same quality of television reception as most of the complainants. His system does include a rotatable antenna which allows him to view Ch. 8 from Jonesburro better than most homes visited in the area. He has also installed a satellite receiving system which he uses a majority of the time he is watching television.

Another noted item is that station engineer Charlie Lampe is also the owner/operator of a television repair business. Several of the complainants have stated that when KOKS would not restore their television reception, they then contracted with Mr. Lampe to improve their system at the homeowners own expense. In one instance with Mrs. Piper, he installed new coaxial cable, and two FM traps. In the case of Mr. & Mrs. Ellis, he installed a booster amplifier just one week prior to our visit to their home. In other instances the complainants have installed satellite receiving systems when they could o longer receive off the air pictures as before.

I visited with Mr. Lampe and asked him what he was instructed to do during the visits he made to each complainant. He stated that he was instructed by Don Stewart to install filters on console television sets only. I then asked him if he could start from scratch, what would it take to restore the picture reception at these residences. He recommended a very high gain antenna, coax cabling, rotor, and high quality filter or filters. He did not recommend booster amplifiers for those in the higher RF areas.

During all of the home visits, we video tape recorded the television pictures received with KOKS transmitting and then with the KOKS transmitter turned off. With the use of a spectrum analyzer we were able to verify when the station transmitter was off. In addition, we took both video tape recordings and 35mm photographs of the KOKS tower. The video recording and photographs are being submitted along with this report.

COMPLAINANTS FRUSTRATIONS:

Most of the complainants have become very frustrated and angry at both KOKS and the FCC. While being very courteous and cooperative during our visits, they still voiced concern that the Commission keeps sending a new engineer to visit them once a year, yet no actions appear to be taken after the visits. The Hillis's and Mrs. Smith voiced concern that MMB will respond only by phone to their questions, but not officially in writing.

During many of the visits the complainants were not convinced that KOKS had gone off the air for testing. They have a great distrust of station management to the extent that one of the complainants called me at the hotel while I was there to tell me what the manager was doing at the tower site that night, so I could go and investigate. I later learned that the manager was taking their old 4 bay antenna out of a shed so it could be shipped back to the manufacturer.

When the television pictures did not clear up as they expected, some of the complainants began asking if some of the interference could be due to either new low power UHF TV station (1kW), or radio station KKLR which had a power increase within the last two years. To satisfy this concern we contacted all three stations and had them go off the air while viewing the television receivers at both the Smith and Hillis residences. This resulted in no improvement in picture quality.

FIELD STRENGTH MEASUREMENTS:

We measured the field strength near each residence visited, with the exception of the Kearbey's were it was inadvertently left out. Later in the week we also measured the signal strength of the station on every access road available at one mile from the KOKS tower. These measurements indicated that the antenna had a null to the north east of the tower site with strong side lobes. (See attachment E). We also took a bearing on the antenna which indicated that the bays were pointing at 245 degrees, with a +- 5 degree error due to the compass we were using.

REPORT SUMMARY:

The licensee of radio station KOKS did not comply with the requirements contained in 47 CFR 73.318, in that they did not restore the quality of viewing each complainant enjoyed prior to the station commencing operations. The station offered to install only one filter per household on console television receivers only. The station refused to address problems with portable television receivers or radio receivers. The station management stated that they could not afford to provide more than one filter per residence.

The station has installed a new directional antenna with 7 bays instead of 4 without MMB approval and without a proof of performance. In addition, the station may only be operating at 64% of authorized power.

With the changes in complainant equipment, it is not possible to determine the quality of viewing enjoyed prior to the station commencing operations. hanges made to resolve the interference from KOKS have also reduced the amount of signal reaching the television receivers.

When the station did not restore the complainants television reception, they paid to have improvements made to their receiving system. These expenses were not reimbursed by the radio station and many of the improvements were made by the radio station engineer who operates his own television repair business.

ECOMMENDATIONS:

#1 If the station receives a construction permit from MMB for installation and testing of the new 7 bay antenna, then 47 CFR 73.318(b) states that they must begin a new period whereby the station is to resolve television interference. At this point, the station has not resolved the interference they caused when they commenced operation. Most complainants are no longer contacting the station due to the lack of assistance they have received to date. It is my recommendation that upon "official" construction and testing of the new antenna, the station take out an advertisement in the local paper which notifies the public of the new one year interference resolution period, and to provide the public with a point of contact for registering a complaint.

#2 After review of the case files, I find that the previous blanketing area observed in this matter was the 2.45 mile radius from the KOKS tower. However, this station utilizes a directional antenna with a main lobe apposedly centered on a 250 degree bearing. Since most of the residents in this area are attempting to receive Ch. 12 out of Cape Girardeau, MO (47 degree bearing from KOKS tower), any homeowner in the main lobe will be pointing their television antennas in the general direction of the KOKS tower. The blanketing contour should conform more to the directional pattern of the station, than to a fixed radius from the tower.

#3 The KOKS engineer was under instructions from station management to install filtering on only one console television receiver per household with no filtering on portable units. When the station did not restore reception to these residences, several of them contracted with this same engineer to improve their reception at the homeowners expense. They contracted with this engineer because he owns and operates a television repair business in the area. The station should be required to reimburse any resident in the blanketing area for expenses they have incurred to bring the quality of their television reception back to that received with the station off the air.

ATTACHMENT A

FIELD STRENGTH MEASUREMENT
OF
DESIRED TELEVISION STATIONS

FIELD STRENGTH MEASUREMENTS
OF DESIRED TELEVISION STATIONS

TIME	DATE	FREQUENCY	MEASUREMENT	STATION	
8:40am	2/10/92	89.50MHz	1,750mv/m	KOKS	
8:44am	2/10/92	83.25MHz	400uv/m	WPSD-TV	CH. 6
8:48am	2/10/92	181.25MHz	935uv/m	KAIT-TV	CH. 8
8:52am	2/10/92	205.25MHz	1,500uv/m	KFVS-TV	CH.12

ATTACHMENT B

SELECTED KOKS TRANSMITTER LOGS

DAILY TRANSMITTER LOG FOR KOKS 89.5 FM - POPLAR BLUFF, MO.

DAY Monday DATE Feb 10 19 92 CST_____ OR CDT_____

OPERATORS	ON	OFF	TIME	PLATE KV	PLATE CURRENT	OUTPUT%
Don ~~Stewart~~	12Am	8Am	12Am	119	234	94.9
"	"	"	4Am	119	234	94.9
"	"	"	8Am	119	234	949
M Clint	8Am	2:30pm	9 25	119	237	95.5
"	"	"	1126	119	241	95.5
"	"	"	1:10	119	237	95.1

TOWER LIGHT CHECK OK-Don St

E.B.S. RECEIVED_____

E.B.S. SENT_____

COMMENTS Temp. 25
F-Cast - P.C. Show
Ex High - 53

USE BACK OF PAGE

DAILY TRANSMITTER LOG FOR KOKS 89.5 FM - POPLAR BLUFF, MO.

DAY Sat DATE Feb 1 1992 CST ~ OR CDT ____

OPERATORS	ON	OFF	TIME	PLATE KV	PLATE CURRENT	OUTPUT%
Don Stewart	12Am	8Am	12Am	119	233	94.7
"	"	"	4Am	119	234	94.9
"	"	"	8Am	119	234	94.9
Ben Pierard	3AM	4Pm	11Am	119	233	94.7
"	"	"	2Pm	11.9	233	94.1
Harold Fekker	4Pm	10PM	7:07	11.9	233	94.1
"	"	"	7:01	11.9	2.33	94.1
"	"	"	10:05	11.9	235	94.9

TOWER LIGHT CHECK: O.K. Don S.

E.B.S. RECEIVED ____

E.B.S. SENT ____

COMMENTS Temp - 34
T-Cast - FAIR
Ex Hrg 59
Low Tonite 33

USE BACK OF PAGE.

DAILY TRANSMITTER LOG FOR KOKS 89.5 FM - POPLAR BLUFF, MO.

DAY Wed. DATE Jan 1 19 92 CST _____ OR CDT _____

OPERATORS	ON	OFF	TIME	PLATE KV	PLATE CURRENT	OUTPUT%
Don Stewart	12Am	8Am	12Am	118	234	95.5
"	"	"	4Am	118	234	9.57
"	"	"	8Am	119	233	9.54
" & Wade	8Am	12:30	10:30	118	233	9.51
"	2	4	130	115	233	959
Ben Stewart	230	1030	730	11.9	231	95.5
"	4	"	630	11.9	234	95.5
"	"	"	930	11.9	233	95.3

TOWER LIGHT CHECK OK. Don S

E.B.S. RECEIVED _____

E.B.S. SENT _____

COMMENTS Temp - 39
F last - - cloudy
Ex Height - 45

USE BACK OF PAGE.

DAILY TRANSMITTER LOG FOR KOKS 89.5 FM - POPLAR BLUFF, MO.

DAY Sunday DATE Dec 1 19 ~ CST _____ OR CDT _____

OPERATORS	ON	OFF	TIME	PLATE KV	PLATE CURRENT	OUTPUT%
Don Stewart	12Am	8Am	12Am	119	240 ~~235~~	93P
"	"	"	4Am	119	239 ~~240~~	93.0
"	"	"	8Am	119	240	94.3
Ben Steward			2PM	11.9	2.40	92.8
Pam-Morrison	3pm	11pm	5pm	11.9	2.33	90.6
			8pM	11.9	2.33	90.6
			11 pM	11.9	2.35	91.2

TOWER LIGHT CHECK OK - Don Stewart COMMENTS Temp - 37

E.B.S. RECEIVED _____ F- East. - Rain

E.B.S. SENT _____ Ex Hugh - 38

Low Tonite 34

USE BACK OF PAGE.

DAILY TRANSMITTER LOG FOR KOKS 89.5 FM - POPLAR BLUFF, MO.

DAY ~~TUES.~~ FRIDAY DATE NOV 1 19 91 CST ✓ OR CDT ____

OPERATORS	ON	OFF	TIME	PLATE KV	PLATE CURRENT	OUTPUT%
Don Steve	12Am	8Am	12Am	11.9	2.38	9.51
"	"	"	4Am	11.9	2.39	95.3
"	"	"	8Am	11.9	2.39	95.3
Don Dwain	3pm	11pm	2:50	11.9	2.37	95.3
			5:50	11.9	2.36	95.1
			7:50	11.8	2.35	95.2
			10:50	11.9	2.37	95.7

TOWER LIGHT CHECK O.K. Don St.

E.B.S. RECEIVED ____

E.B.S. SENT ____

COMMENTS Temp. 50
F Coast shower the PC
Ev High 50

USE BACK OF PAGE.